

No.



200000183

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

The Regents of the University of California

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMERICAL GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COWPEA

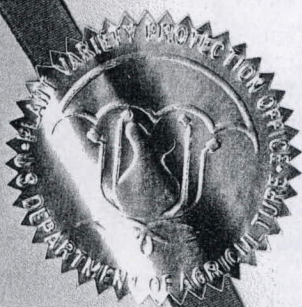
'California Blackeye-No. 27'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fifth day of February, in the year of our Lord two thousand one.

Secretary of Agriculture

Attest:

Acting Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service



200000183

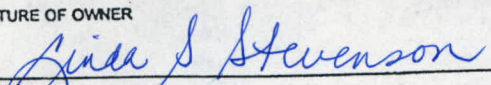
REPRODUCE LOCALLY. Include form number and date on all reproductions

UC Case No. 2000-104-1  
Form Approved - OMB No. 0581-0055U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following state rents are made, in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

1. NAME OF OWNER The Regents of the University of California		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME		3. VARIETY NAME California Blackeye No. 27	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 1111 Franklin Street, 12th Floor Oakland, California 94607-5200		5. TELEPHONE (include area code) (510) 587-6000		FOR OFFICIAL USE ONLY PVPO NUMBER 200000183 FILING DATE 03/10/00	
		6. FAX (include area code) (510) 587-6090			
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporation		8. IF INCORPORATED, GIVE STATE OF INCORPORATION California		9. DATE OF INCORPORATION June 18, 1868	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Benton S. Duffett, Jr. and R. Danny Huntington Burns, Doane, Swecker & Mathis, L.L.P. P.O. Box 1404 Alexandria, VA 22313-1404				FILING AND EXAMINATION FEES: \$ 2450.00 DATE 03/10/00 CERTIFICATION FEE: \$ 320 DATE 10/23/00	
11. TELEPHONE (include area code) (703) 838-6602		12. FAX (include area code) (703) 836-2021		13. E-MAIL bend@burnsdoane.com	
14. CROP KIND (Common Name) Cowpea		15. GENUS AND SPECIES NAME OF CROP Vigna unguiculata (L.) Walp.		16. FAMILY NAME (Botanical) Leguminosae	
17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)			
19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act <input checked="" type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input type="checkbox"/> NO (If "no", go to item 22)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED		22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)			
23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)		24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER 		SIGNATURE OF OWNER			
NAME (Please print or type) Linda S. Stevenson		NAME (Please print or type)			
CAPACITY OR TITLE Principal Prosecution Analyst		DATE 3-7-00		CAPACITY OR TITLE	
		DATE			

## Application for Plant Variety Protection Certificate for 'CB27'

### Item 18 attachments

#### 18a. Exhibit A. Origin and Breeding History of the Variety

'California Blackeye No. 27' (CB27) was developed from a single plant selection made in 1992 from University of California, Riverside (UCR) breeding line H8-8. Line H8-8 was developed using a pedigree breeding procedure from a cross between UCR breeding lines 336 and 1393 made in 1986. UCR breeding line 336 was the result of a cross between CB5 and CB3 made in 1983. UCR breeding line 1393 was developed from a three-way cross involving heat tolerant accessions 'Prima' and TVu4552 made in 1981, and then University of California, Davis (UCD) breeding line 7977 in 1983. UCD 7977 has the pedigree PI166146/CB5//CB5.

Breeding line 1393 has heat tolerance derived from Prima and TVu4552. Heat tolerance was selected by evaluating segregating populations for flower production and podset under very hot summer field conditions at the University of California Desert Research and Extension Center, near El Centro, CA. The  $F_2$ ,  $F_4$ , and  $F_6$  generations derived from the cross 1393/336 that gave rise to H8-8 were also evaluated for heat tolerance during the summers of 1987 and 1989 at the Desert Research and Extension Center.

Selection for agronomic and seed quality traits was conducted at the UCR Experiment Station in 1988-89. H8-8 was first evaluated in replicated yield tests in 1990 as a line derived from a bulk of an  $F_6$  family made in 1989. The  $F_3$  and  $F_5$  generations were evaluated for Fusarium wilt resistance in greenhouse pot evaluations conducted using a standard seedling root-clip-dip inoculation procedure in the winters of 1987-88 and 1988-89. Single plant selections from H8-8, taken in 1992, were evaluated for resistance to *Meloidogyne incognita* and *M. javanica* using growth chamber 'pouch' and field tests, and for heat tolerance at the UCR Coachella Valley Agricultural Research Station, Oasis, CA, in 1992 and 1993. Field performance trials of the H8-8 sublines were conducted on experiment stations and farmers fields in the San Joaquin Valley, CA from 1992 through 1998.

CB27 is uniform and stable as noted in numerous large plot and small plot trials. Rarely, outcrossing occurs that results in off-type plants. Most off-types produce long vines at flowering and can be easily rouged.

CB27 and the commercially available California blackeye varieties CB46, CB88 and CB5 have the nematode resistance gene '*Rk*' that confers strong resistance to common strains of *Meloidogyne incognita* root-knot nematode. CB27 also carries an additional gene that broadens the effectiveness of this resistance by providing protection against *Rk*-virulent forms of *M. incognita* and *M. javanica* root-knot nematodes not controlled by gene *Rk* alone. Reproduction and root galling on CB27 caused by *Rk*-

virulent *M. incognita* and *M. javanica* are about half that observed on CB46 and CB88 (Table 1).

CB27 has resistance to both Race 3 and Race 4 of Fusarium wilt (*Fusarium oxysporum* F.sp. *tracheiphilum*), while CB46 and CB88 only have resistance to Race 3 of this disease (Table 2). CB5 is susceptible to both Race 3 and Race 4. Race 3 is the predominate race of Fusarium wilt in California, but fields with Race 4 have been identified in several counties in California. CB27 produced greater yields than CB46 and CB88 in fields where Fusarium wilt Race 4 and a gene *Rk*-virulent strain of *M. incognita* root-knot nematode were present in trials conducted in fields near Denair, CA in 1995 and 1996. CB27 yielded 21.0 and 24.5 cwt/ac while CB46 yielded 16.5 and 20.8, and CB88 yielded 11.5 and 10.2 cwt/ac in 1995 and 1996, respectively.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION  
BELTSVILLE, MARYLAND 20705

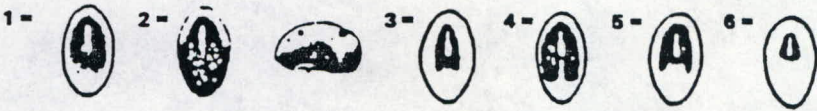






OBJECTIVE DESCRIPTION OF VARIETY  
(Cowpea)

200000183

INSTRUCTIONS: See Reverse

NAME OF APPLICANT(S) The Regents of the University of California	VARIETY NAME OR TEMPORARY DESIGNATION California Blackeye No. 27
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code) 1111 Franklin Street, 12th Floor Oakland, CA 94607-5200	FOR OFFICIAL USE ONLY PVPO NUMBER

Place the appropriate number that describes the varietal character of this variety in the boxes below.  
Place a zero in first box (e.g.  or ) when number is either 99 or less.

1. PLANT HABIT AT GREEN SHELL STAGE: <input type="text" value="1"/> 1 = ERECT    2 = SEMIERECT    3 = PROCUMBENT 4 = PROSTRATE		2. PLANT SIZE: <input type="text" value="6"/> <input type="text" value="0"/> CM. HIGH AT MATURITY	
3. STEM COLOR: <input type="text" value="1"/> 1 = GREEN    2 = PURPLE		4. NODE COLOR: <input type="text" value="2"/> 1 = GREEN    2 = PURPLE	
5. FOLIAGE: <input type="text" value="2"/> 1 = OPEN    2 = COMPACT		6. LEAF COLOR (See Reverse): <input type="text" value="3"/> 1 = LIGHT GREEN    2 = MEDIUM GREEN    3 = DARK GREEN	
7. LEAF SURFACE: <input type="text" value="2"/> 1 = SMOOTH    2 = BLISTERED		<input type="text" value="2"/> 1 = DULL    2 = GLOSSY	
8. FLOWER COLOR (See Reverse): <input type="text" value="4"/> 1 = PURPLE    2 = LAVENDER    3 = TINGED 4 = WHITE		9. FIRST FLOWERING <input type="text" value="5"/> <input type="text" value="2"/> NUMBER OF DAYS	
10. POD: <input type="text" value="3"/> PLACEMENT: 1 = BELOW FOLIAGE    2 = ABOVE FOLIAGE 3 = AT FOLIAGE LEVEL <input type="text" value="1"/> <input type="text" value="8"/> CM. LONG <input type="text" value="1"/> <input type="text" value="0"/> MM. WIDE <input type="text" value="2"/> CONSTRUCTIONS: 1 = NONE    2 = SLIGHT    3 = DEEP <input type="text" value="2"/> COLOR (Green shell maturity): 1 = SILVER-GREEN    2 = GREEN    3 = LIGHT PURPLE    4 = DARK PURPLE <input type="text" value="2"/> COLOR (Dry maturity): 1 = WHITE    2 = STRAW    3 = DRAB    4 = PURPLE <input type="text" value="1"/> CROSS SECTION (Green shell stage-width/height): 1 = (1: <)    2 = (1: >)    3 = (1:1)		<input type="text" value="2"/> LOCATION: 1 = SCATTERED    2 = BUNCHED <input type="text" value="2"/> CURVATURE: 1 = STRAIGHT    2 = CURVED <input type="text" value="1"/> SURFACE (Green shell maturity): 1 = DULL    2 = GLOSSY	
11. SEED: <input type="text" value="0"/> <input type="text" value="9"/> NUMBER OF SEEDS PER POD <input type="text" value="1"/> SHAPE (See Reverse): 1 = KIDNEY    2 = OVATE TO OVOID    3 = CROWDER 4 = GLOBOSE    5 = RHOMBOID <input type="text" value="1"/> <input type="text" value="2"/> MM. LONG <input type="text" value="0"/> <input type="text" value="7"/> MM. WIDE <input type="text" value="5"/> HILAR EYE TYPE: <input type="text" value="2"/> <input type="text" value="2"/> <input type="text" value="4"/> GM. PER 1000 SEEDS		 1 =  2 =  3 =  4 =  5 =  6 =  SPECKLED    BLOTCH    NARROW    BIG    SMALL    VERY SMALL	
<input type="text" value="1"/> COAT: 1 = WRINKLED    2 = SMOOTH <input type="text" value="2"/> COLOR PATTERN: 1 = SINGLE COLOR    2 = PATTERNED    3 = MARBLED 4 = SPECKLED			
<input type="text" value="0"/> PRIMARY COLOR (Single color or basic color): 1 = PURPLE    2 = BLACK    3 = DULL BLACK    4 = BLUE    5 = RED 6 = COFFEE    7 = MAROON    8 = BUFF OR CLAY    9 = PINK    0 = WHITE			
SECONDARY COLORS PRODUCING THE PATTERN, MARBLING OR SPECKLING (Enter a zero in boxes where the colors do not identify the secondary colors.):			
<input type="text" value="0"/> 1 = PURPLE	<input type="text" value="1"/> 2 = BLACK	<input type="text" value="0"/> 3 = DULL BLACK	<input type="text" value="0"/> 4 = BLUE
<input type="text" value="0"/> 6 = COFFEE	<input type="text" value="0"/> 7 = MAROON	<input type="text" value="0"/> 8 = BUFF	<input type="text" value="0"/> 9 = PINK
			<input type="text" value="0"/> 5 = RED
			<input type="text" value="0"/> 0 = WHITE

12. DISEASE (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

<input checked="" type="checkbox"/> 2 FUSARIUM WILT	<input checked="" type="checkbox"/> 2 ROOT KNOT NEMATODE	<input type="checkbox"/> 0 CHARCOAL ROT	<input type="checkbox"/> 0 ZONATE LEAF SPOT
<input type="checkbox"/> 0 RED LEAF SPOT	<input type="checkbox"/> 0 POWDERY MILDEW	<input type="checkbox"/> 0 COWPEA CHLOROTIC MOTTLE VIRUS	<input type="checkbox"/> 0 SOUTHERN BEAN MOSAIC VIRUS
<input type="checkbox"/> 0 BEAN YELLOW MOSAIC VIRUS	<input type="checkbox"/> 0 CUCUMBER MOSAIC VIRUS	<input type="checkbox"/> 0 BEAN POD MOTTLE VIRUS	<input type="checkbox"/> 0 SOYBEAN CYST NEMATODE
<input type="checkbox"/> 0 COWPEA YELLOW MOSAIC VIRUS	<input type="checkbox"/> 0 BACTERIAL CANKER	<input type="checkbox"/> 0 CERCOSPORA LEAF SPOT	<input type="checkbox"/> 0 STING NEMATODE
<input type="checkbox"/> 0 RUST	<input type="checkbox"/> 0 SOUTHERN BLIGHT	<input type="checkbox"/> 0 ROOT ROT	<input type="checkbox"/> OTHER (Specify) _____

13. INSECT (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

<input type="checkbox"/> 0 MEXICAN BEAN BEETLE	<input checked="" type="checkbox"/> 1 COWPEA APHID	<input type="checkbox"/> 0 COWPEA CURCULIO	<input type="checkbox"/> 0 STINK BUGS
<input type="checkbox"/> 0 LESSER CORNSTALK BORER	<input type="checkbox"/> 0 EUROPEAN CORNBORER	<input type="checkbox"/> 0 CORN EARWORM	<input type="checkbox"/> 0 BEET ARMYWORM
<input type="checkbox"/> 0 THRIPS	<input type="checkbox"/> 0 SERPENTINE LEAF MINERS	<input checked="" type="checkbox"/> 1 OTHER (Specify) <u>Lygus</u>	

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant size	CB46	Plant habit	CB46
Pod size	CB46	Plant pigmentation	CB46
No. days to maturity	CB46	Seed coloration	CB46

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for completing this form:

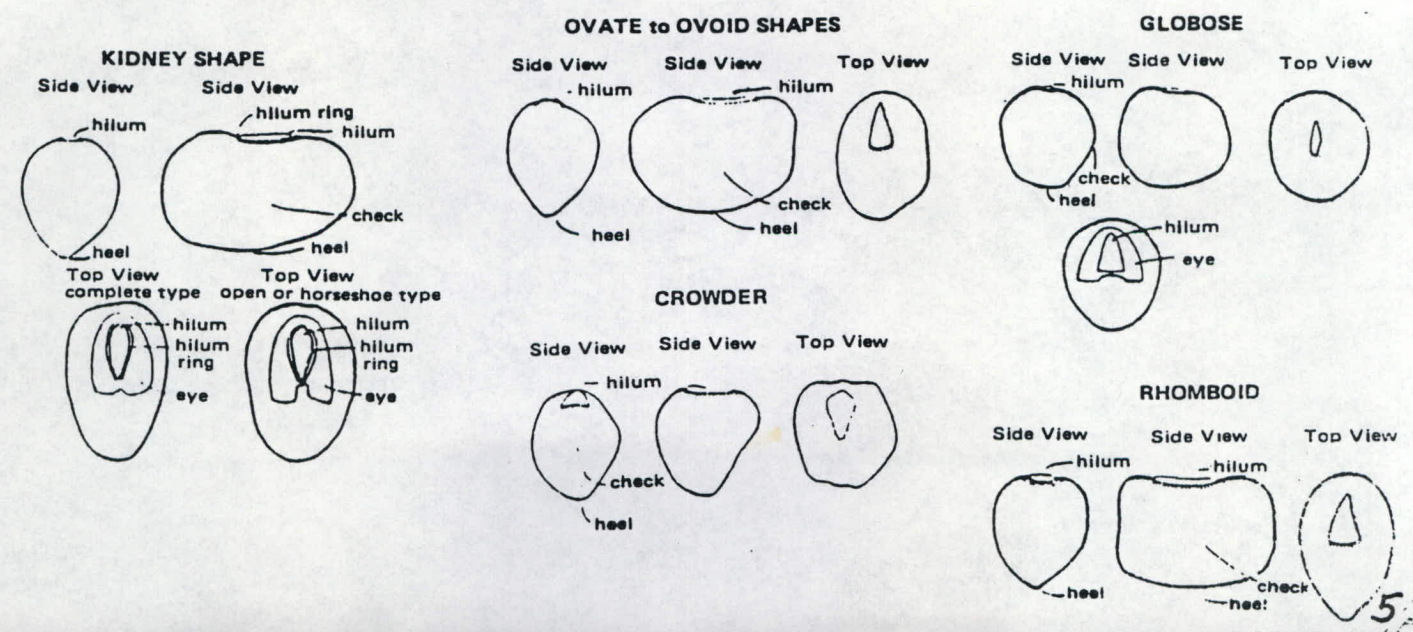
1. C. V. Piper, 1912, Agricultural Varieties of Cowpea and Related Species, U.S.D.A., Bulletin No. 229.
2. L. L. Ligon, 1958, Characteristics of Cowpea Varieties, Oklahoma State University, Bulletin B-518.
3. W. J. Spillman and W. J. Sando, 1929, Mendelian Factors in the Cowpea, papers of the Michigan Academy of Science, Arts and Letters, Vol. XI.

LEAF COLOR: Any recognized color chart may be used to determine the leaf color of the described variety. The following cowpea varieties may be used as a guide to identify colors listed:

1. Light Green - Texas Cream 40
2. Medium Green - Big Boy
3. Dark Green - California Blackeye #5.

FLOWER COLOR: White flower should be treated with a one percent solution of hydrochloric acid to determine if anthocyanin is present. If color appears as a result of the test, classify as tinged.

TERMS USED TO DESCRIBE SHAPES:



## 18d. Exhibit D. Additional Description of the Variety

The phenological development of line CB27 is similar to CB46. With a May sowing date and typical growing conditions in the San Joaquin Valley, CA, CB27 begins flowering about 52 days after sowing and matures its first flush of pods in about 95 days from sowing. CB27 has an erect 'bush' growth habit and is substantially more compact than CB5 and CB88, and slightly more compact than CB46.

Preliminary and advanced field tests of CB27 were conducted by UCR from 1992 to 1994. From 1995-1998, replicated yield trials were conducted at several sites in the San Joaquin Valley in collaboration with UCD-based Statewide Dry Bean Testing Program. These tests were conducted in fields free from Race 4 Fusarium wilt and *Rk*-virulent root-knot nematodes and indicate that the yield potential of CB27 is equivalent to CB46 (Table 3).

CB27 has heat tolerance that enhances flower production and pod set under high temperature conditions that are commonly encountered in the southern San Joaquin Valley. Minimum night temperatures greater than 64 °F (18 °C) during the early reproductive period of the crop cause reductions in podset of CB46, CB88 and CB5, but much less so with CB27. CB27 produced 2320 and 1330 lb/ac compared to 1800 and 380 lb/ac for CB5 in field trials conducted specifically to measure the effects of heat tolerance on grain yields at the Shafter Field Station near Bakersfield, CA and at the UCR Coachella Valley Agricultural Field Station, respectively, in 1996 (See Ismail, A. M. and A. E. Hall. 1998. Crop Sci. 38: 381-390). CB27 also has produced greater yields than CB46 at location/years having hot temperatures during the reproductive period of the crop (Table 3).

CB27 has a bright white seed coat and typical blackeye bean appearance. The seed shape is similar to CB5, slightly flatter and less round than CB46. Its individual seed weight is about the same or slightly greater than CB46 (Table 4). The seed does not 'leak' dark pigments when soaked or canned. Canning tests by S&W Foods, Modesto,

CA and Michigan State University of grain grown in two locations in 1996 and 1997 suggest that this line has excellent canning quality.

CB27 will only be available as Certified Seed that is produced in the Central Valley of California from Foundation Seed provided by the Foundation Seed Services of the California Crop Improvement Association (CCIA) and Certified by the CCIA. Our experience indicates that CB27 seed can be produced in the Central Valley of California with no detectable levels of known seed-borne diseases. Various serious seed-borne diseases, such as blackeye cowpea mosaic potyvirus and bacterial blight, occur frequently in many other cowpea producing regions of the United States. Foundation Seed can be used to produce Foundation Seed when sufficient breeders seed is not available.

Table 1. Comparison of CB27 and CB46 for reproduction (number of egg masses) of *Rk*-avirulent and *Rk*-virulent *M. incognita* and *M. javanica* root-knot nematodes in growth chamber 'pouch' tests, and field ratings of root galling in the presence of these nematodes.

Line	<i>Rk</i> -avirulent <i>M. incognita</i>		<i>Rk</i> -virulent			
			<i>M. incognita</i>		<i>M. javanica</i>	
	Reprod.	Gall <sup>1</sup>	Reprod.	Gall <sup>2</sup>	Reprod.	Gall <sup>2</sup>
	-no.-	score	-no.-	score	-no.-	score
CB27	0	0	70	2.1	71	2.3
CB46	2	0.03	150	4.7	207	4.9
CB88	1	0	176	5.1	227	4.5
Sus. Check <sup>3</sup>	211	0.60	135	2.0	367	6.8
L.S.D. <sub>(0.05)</sub>	17	0.15	47	0.9	53	0.6

<sup>1</sup>Gall = Galling scores based on a standardized scale- 0 = no detectable galling to 4 = heavily galled

<sup>2</sup>Gall = Galling scores based on a standardized scale- 0 = no detectable galling to 10 = heavily galled.

<sup>3</sup> Susceptible check is either CB3 or H8-9; both lines do not carry gene *Rk*

Table 2. Average scores<sup>1</sup> ( $\pm$  S.E.) of 10-12 plants for reaction of CB27, CB3, CB88, and CB5 and to Races 3 and 4 of Fusarium wilt (*Fusarium oxysporum* F.sp. *tracheiphilum*) in seedling root-clip-dip inoculation tests conducted in a greenhouse, Spring 1995.

Genotype	Race 3	Race 4	Classification
CB27	0.0 $\pm$ 0.1	0.1 $\pm$ 0.1	Resistant to Races 3 & 4
CB3	0.3 $\pm$ 0.2	0.4 $\pm$ 0.1	Resistant to Races 3 & 4
CB88	0.0 $\pm$ 0.0	4.7 $\pm$ 0.2	Resistant to Races 3; Susceptible to Race 4
CB5	2.3 $\pm$ 0.3	4.6 $\pm$ 0.2	Susceptible to Races 3 & 4

<sup>1</sup>Plants scored 43 days after inoculation on 0-5 scale where 5 = plant dead, 4 = 80 to 100% of leaves chlorotic; 3 = 30 to 79% of leaves chlorotic; 2 = 1 to 29% of leaves chlorotic; 1 = slight dwarfing and vascular discoloration in stem cross-section; 0 = no symptoms.

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U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)  The Regents of the University of California	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER  	3. VARIETY NAME  California Blackeye No. 27
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)  1111 Franklin Street, 12th Floor Oakland, California 94607-5200	5. TELEPHONE (include area code)  (510) 587-6000	6. FAX (include area code)  (510) 587-6090
7. PVPO NUMBER		
8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
9. Is the applicant (individual or company) a U.S. national or U.S. based company? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country		
10. Is the applicant the original owner? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If no, please answer <u>one</u> of the following:  a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country  b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country		
11. Additional explanation on ownership (if needed, use reverse for extra space):		

**PLEASE NOTE:**

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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